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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/718,767	11/22/2000	Tsuyonobu Hatazawa	09792909-4673	2706

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EXAMINER

CREPEAU, JONATHAN

ART UNIT

PAPER NUMBER

1746

DATE MAILED: 05/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 09/718,767	Applicant(s) HATAZAWA ET AL.	
Examiner Jonathan S. Crepeau	Art Unit 1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 18, 2004 has been entered.

This Office action addresses claims 1-11. Although they have been amended, the claims remain rejected under 35 USC §103 for substantially the reasons of record. This action is non-final.

Claim Rejections - 35 USC § 103

2. Claims 1-6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaloner-Gill (U.S. Patent 5,445,856) in view of Bullock et al (U.S. Patent 5,219,676).

Regarding claim 1, Chaloner-Gill teaches a nonaqueous electrolyte battery comprising a lithium metal anode (see column 3, line 40). Regarding claim 11, the battery is a secondary battery (see col. 3, line 31). With regard to claim 1, as shown in Figure 1, the battery element (10) is contained in an outer covering member composed of a laminated film (5) and is sealed by heat seals. The laminated film has two outer covering members, each having a recess therein (see Figs. 3 and 4). The laminate may be in the form of a single sheet, with the first and second

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covering members folded together and heat-sealed (see claims 8 and 17 of Chaloner-Gill).

Regarding claims 1, 5, and 6, the battery comprises a gas absorbing material which is mixed with a resin material and extruded (i.e., molded) to form a gas absorbing member which forms one of the inner layers of the laminate (see col. 2, lines 48-63). Regarding claim 1, the gas absorbing material is present in a first gas absorbable member on a first side of the battery element (in member 30) and in a second gas absorbable member on a second side of the battery element (in member 31) (see Figs. 1, 4, and 5). Regarding claims 2-4, the gas absorbing material may comprise a porous metal oxide (e.g., alumina) or activated carbon material (see col. 8, line 13). Regarding claim 1, although the reference does not teach that the recesses in the laminate sheets are "preformed," this is a process limitation that is given little patentable weight since it does not limit the structure of the claimed product. See MPEP §2113.

The reference further does not expressly teach that the gas absorbing material is present in an amount of 0.1 to 95 wt. percent on a basis of a weight of the resin material, as recited in claim 1.

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to use a suitable amount of gas absorbing material based on the size of the battery and/or electrode element, thereby rendering the claimed range obvious. It has been held that the discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art. *In re Boesch*, 205 USPQ 215 (CCPA 1980). In this case, it is known that an amount of gas absorbing material can be selected based upon the size of the battery, as shown by column 6, lines 26-35 of Bullock et al.:

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The amount of the gel will vary from battery size to battery size within the guidelines of being a sufficient quantity to absorb all water vapor produced during the self-discharge reactions. For normal 12V automobile batteries having six cells, the amount could range between about 50 grams to 300 grams. One skilled in the art could readily select a desiccant quantity by knowing the battery size, plate construction and volume of electrolyte left in the battery after the dumping step.

Although Bullock relates to lead-acid batteries, its teachings regarding the battery size would be applicable to all batteries employing a gas absorbing agent. Accordingly, the artisan would be motivated to use a suitable amount of gas absorbing material in the battery of Chaloner-Gill, thereby rendering the subject matter of claim 1 obvious.

3. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaloner-Gill in view of Bullock et al. as applied to claims 1-6 and 11 above, in further view of Kamauchi et al (U.S. Patent 5,538,814).

Chaloner-Gill does not expressly teach that the electrolyte is a gel electrolyte (claim 7), that the negative electrode contains a carbon intercalation material (claims 8, 9), or that the positive electrode contains a composite oxide of lithium and a transition metal (claim 10).

The patent of Kamauchi et al is directed to a lithium secondary battery. The battery may contain lithium cobalt oxide in the positive electrode (col. 4, line 30), a carbon negative electrode (col. 7, line 7), and a gel electrolyte containing a high molecular weight matrix polymer (col. 8, line 67; col. 11, line 5).

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the disclosure of Kamauchi et al. provides the artisan sufficient motivation to use these materials in the battery of Chaloner-Gill. In column 4,

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line 41, Kamauchi et al. teach that the lithium cobalt oxide, when combined with other materials, provides the battery with "high electromotive force," and in column 7, lines 6-9, the reference teaches that the carbon negative electrode "effectively prevents dendrite[s] without lowering energy density of the secondary battery." Further, the reference teaches in column 12, lines 46-59 that the gel electrolyte "shows good adhesion with electrodes, which leads to an improved ionic conductivity." Accordingly, the artisan would be motivated to use each of these materials in the battery of Chaloner-Gill.

Response to Arguments

4. Applicant's arguments filed May 18, 2004 have been fully considered but they are not persuasive. Applicants assert that Chaloner-Gill (WO 95/13629) "fails to disclose or suggest a first outer covering member having a preformed recess accommodating a battery element. Instead, *Chaloner-Gill* merely discloses two flat panels 30 and 31 that both flex around a battery element." However, it is submitted that although the claimed recess is recited as being "preformed," this limitation is not sufficient to distinguish the claimed subject matter over the reference. As set forth above, this limitation is a process limitation that does not limit the structure of the final product in a meaningful way. In other words, the fact that the claimed recess is "preformed" is not seen to impart a structure to the recess which would distinguish it from the structure of the recess disclosed by Chaloner-Gill. As such, the reference is still believed to be applicable to the claimed subject matter and the rejection under 35 USC §103 is maintained.

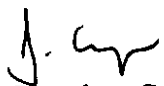
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Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached at (571) 272-1302. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jonathan Crepeau
Patent Examiner
Art Unit 1746
May 27, 2004